Post-Doctoral Fellowship Opportunity: Examining kelp bed standing-stock blue carbon potential

An opportunity exists for a Postdoctoral for 2024_25 within the African Coelacanth Ecosystem Programme Project entitled "Multidisciplinary study of mesophotic sea-forest (*Ecklonia radiata*) in iSimangaliso MPA: its biodiversity, climate mitigation and socio-ecological resilience value". This project is led by Nelson Mandela University and is closely associated with the WILDTRUST's Blue Action Project entitled "Building socio-ecological resilience to climate change impacts by ecosystem-based adaptation approaches at iSimangaliso MPA".

If you are interested in applying for this please get in touch with Dr Lucy Woodall (l.woodall@exeter.ac.uk) and Dr Jackie Raw (jackie.raw33@gmail.com) by 10 December 2023.

Project summary

Kelps are the best-studied group of macroalgae. They represent ecologically important habitats and have a range of ecological functions, ecosystem services and unique assemblages of organisms. A newly discovered mesophotic kelp bed in the iSimangaliso Wetland Park World Heritage Site on the east coast of South Africa provides a unique opportunity to provide insights into the ecological and economic value of these kelp beds and inform conservation efforts.

Specifically this post-doctoral position will focus on quantifying and estimating the total value of the standing-stock blue carbon potential of mesophotic kelp beds within the wider project 'Multidisciplinary study of mesophotic sea-forest (*Ecklonia radiata*) in iSimangaliso MPA: its biodiversity, climate mitigation and socio-ecological resilience value'. Kelp forests are not currently considered blue carbon ecosystems because there is no long-term carbon storage within local sediment as these algae occur on hard substrates. While there is growing evidence of the export of kelp fronds into sedimented habitats, this is hard to evaluate and quantify. This post-doctoral position will take an alternative approach to assessing climate mitigation potential of mesophotic kelp by estimating carbon content from biomass and density assessments and will also investigate the carbon sequestration potential of the kelp forest.

Duties

- To undertake research as appropriate to the field of study. The responsibilities may include all or some of the following:
    - Developing research objectives, projects and proposals;
    - Conducting individual and collaborative research projects;
    - Identifying sources of funding and contributing to the process of securing funds;
    - Extending, transforming and applying knowledge acquired from scholarship to research and appropriate external activities;
    - Writing or contributing to publications or disseminating research findings using appropriate media and other means;
    - Making presentations at conferences or exhibiting work in other appropriate events;
    - Assessing, interpreting and evaluating outcomes of research;
    - Developing new concepts and ideas to extend intellectual understanding;
    - Resolving problems to meet research objectives and deadlines;
    - Deciding on /following research programmes and methodologies, often in collaboration with colleagues and sometimes subject to the approval of the head of the research programme on fundamental issues.
- To act as research team member including
    - Mentoring colleagues with less experience and advising on their professional development;

    - Coaching and supporting colleagues in developing their research techniques;
    - Supervising the work of others, for example in research teams or projects;
    - Developing productive working relationships with other members of staff;
    - Co-ordinating the work of colleagues to ensure equitable access to resources and facilities;
    - Dealing with standard problems and help colleagues to resolve their concerns about progress in research.

- To routinely communicate complex and conceptual ideas to those with limited specialist knowledge as well as to peers and to present the results of scientific research to funders, partners and at conferences.

- As determined by the nature of the project and at the direction of the PI, to plan, co-ordinate and implement research programme activity including:
    - Managing the use of research resources and ensuring that effective use is made of them;
    - Monitoring and reporting on the use of research budgets;

Person specific requirements

Qualifications

- Requires a minimum of a Ph.D. degree.

Skills and Understanding

- Possess sufficient specialist knowledge in the discipline to develop/follow research programmes and methodologies.
- Record of research output in high quality publications.
- Strong organisational skills

Prior Experience

Essential

- Experience of successfully measuring carbon content from kelp or relevant flora.
- Experience of successfully quantifying net primary productivity.
- Experience of managing research projects and research teams.
- Experience with statistical analysis of empirical data.
- Understanding of health and safety legislation.

Desirable

- Experience of conducting research at sea.
- Experience working in multidisciplinary groups.
- Experience of undergraduate /postgraduate supervision.
- Experience of acting as principal investigator on research projects.

This Post-doctoral opportunity is funded via the National Research Foundation of the South African Department of Education, Science and Technology. Value and conditions can be accessed via this link: https://www.nrf.ac.za/wp-content/uploads/2023/03/African-Coelacanth-Ecosystem-Programme-ACEP-%E2%80%93-2024-Framework-and-Funding-Guide.pdf